

11PP

OPPT-2002-0060-0024

INITIAL REVIEW EXPOSURE REPORT		P-99-0044	Page 1 of: 1/	
Assessor: MAMANTOV-MOTTZ		Search ()Y	Focus Date: 11/05/98	
SAT	Health: L-M	Focus Rep: 78 AM		
	Eco: H	SAT Rep: GT		
Submitter:		Max. PV	*Manuf.	X
		(kg/yr)	Import	

Use:

Bonding agent for sand used in foundry processes. From STN/CAS on-line: no references The PMN substance is mixed with sand and then reacted with a hardener, causing cross-linking between PMN substance and sand. This resin/sand is used to form the organic mold into which metal for cast ings is poured.

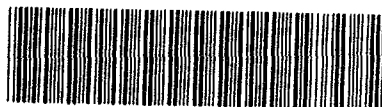
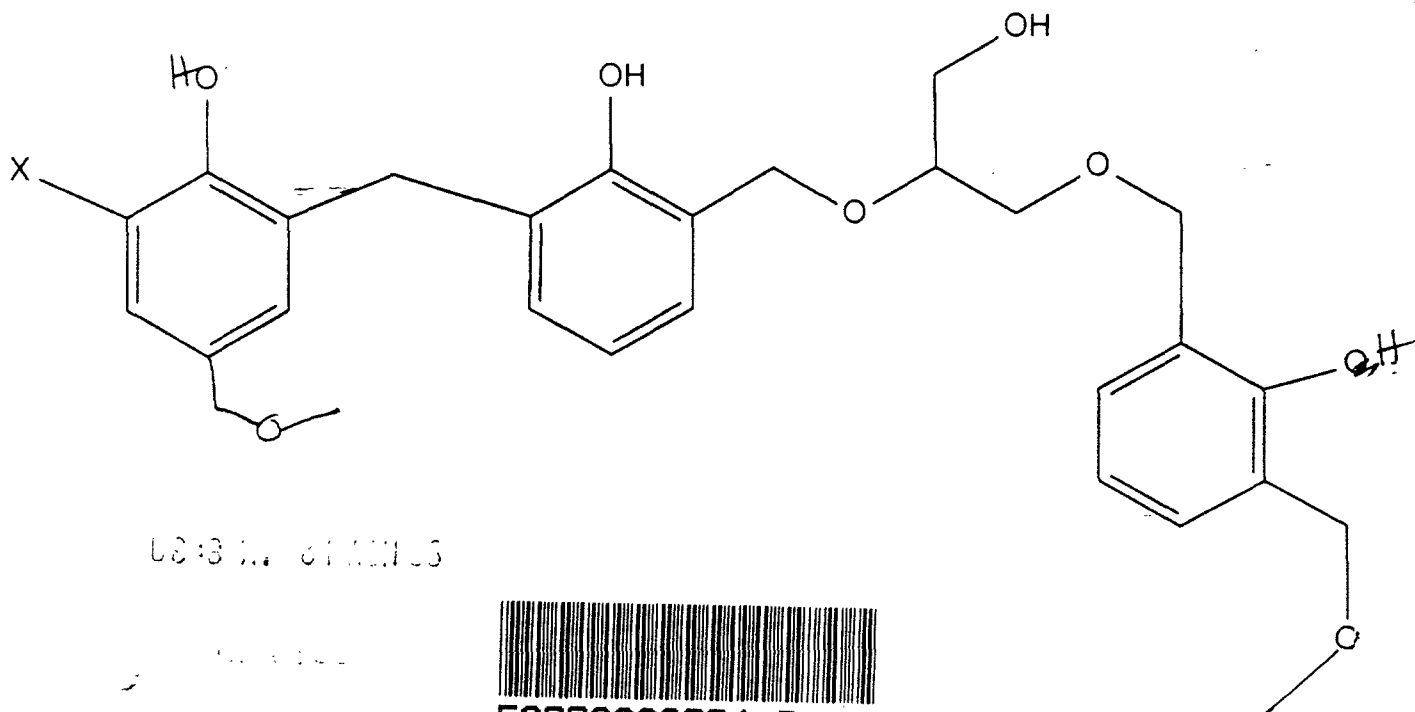
Consumer Exposure	()no,
	()yes, see consumer exp. page
Analog/Comments	

Chemical Name:

Formaldehyde, polymer with phenol and 1,2,3-propanetriol, methylated

Trade Name: CAS: 209810-57-1

Structure:



50990000964/3

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STATE	NEAT	Liquid				EPI ESTIMATIONS	
	MFG	Liquid					
FORMULA			% < 500				
MOL WT			% < 1000				
PROPERTY	Submitted	ICB-CRSS		Method/Ref			
MP (C)							
BP (C)			@ 760 torr			@ 760 torr	
@ P (torr)							
VP (torr)			Est				
S-H2O (g/L)			Est				mg/L
S-Org (g/L)							mg/L
Log Kow							
pH, pKa			Log Koc				
Light Absorption (nm)	< > 290			Log BCF	BCF		
Solvent:			H (atm m3/mol)		1.00E-08		
HYDRO t(1/2) @ pH 7, 25 C			da	Persistence / Bioaccumulation		P/B 1	
Volatilization (H2O) t(1/2)			River	hr	Lake	da	
AOP t(1/2) (hr)	OH	1.04	O3	Total		1.04	
BIODEG	Linear Prob:	-0.06	Nonlinear Prob:	0.00	Survey Ult:	WK-MO	Survey Prim: DA-WK
STP (% Removal)	Tot	2.83	Biod	0.10	Ads	2.73	Air 0.00
REMOVAL IN WWT/POTW % Overall							
			0	25	50	75	90 => 99
CATEGORY							
		RATING	1	2	3	4	
Sorption			low	moderate	strong	v.strong	
Stripping			extensive	moderate	low	negligible	
Biodegradation	Removal		unknown	high	moderate	negligible	
	Destruction		unknown	complete	partial		
Comments:							
AEROBIC BIODEGRADATION							
Ultimate			<= days	weeks	months	> months	
Primary			<= days	weeks	months	> months	
Comments:							

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				CATEGORY			
			RATING	1	2	3	4
ANAEROBIC BIODEGRADATION		Ultimate		<= days	weeks	<u>months</u>	<u>> months</u>
		Primary		<= days	weeks	months	> months
Comments:							
		HYDRO (da)					
HYDROLYSIS		A.		<= mins	hours	days	=> months
(t(1/2) @ pH 7, 25 C)		B.		<= mins	hours	days	=> months
Comments:							
SORPTION TO SOIL & SEDIMENT				v.strong	strong	moderate	<u>low</u>
Comments:							
MIGRATION TO GROUND WATER				negl	slow	moderate	<u>rapid</u>
Comments:							
VOLATILIZATION		Rivers (hr)		negl	slow	moderate	rapid
(t(1/2) w/o sediment)		Lakes (da)		negl	slow	moderate	rapid
Comments:							
PHOTOLYSIS		A. Direct		negl	slow	moderate	rapid
		B. Indirect		negl	slow	moderate	<u>rapid</u>
Comments:							
		AOP t(1/2) hr					
ATMOSPHERIC	A. OH	10		negl	slow	moderate	rapid
OXIDATION	B. O3			negl	slow	moderate	rapid
Comments:							

FINAL
INITIAL REVIEW EXPOSURE REPORT

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CASE NUMBER(S): p-99-0044

ENVIRONMENTAL RELEASES

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RELEASE ID#: 1a Number of Release Sites: 1

RELEASE ACTIVITY: (X)MFG ()PRO ()IND USE ()COMM USE ()CONS USE

RELEASE DESCRIPTION:	WATER	LANDFILL	INCINER	LAND/INCIN	FUGITIVE
Total Releases:	30.00 (kg/yr)	<200.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)
Release Days/yr:	30				0
Per Site Release:	1.00 (kg/day)	<200.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/day)

REMARKS : Landfill release is less than the trigger amount of 200 kg/site/yr.

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RELEASE ID#: 1b Number of Release Sites: 1

RELEASE ACTIVITY: (X)MFG ()PRO ()IND USE ()COMM USE ()CONS USE

RELEASE DESCRIPTION:	WATER	LANDFILL	INCINER	LAND/INCIN	FUGITIVE
Total Releases:	32.00 (kg/yr)	<200.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)
Release Days/yr:	2				0
Per Site Release:	16.00 (kg/day)	<200.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)	0.00 (kg/day)

EXPOSURE BASED REVIEW CRITERIA

Surface DW []y [X]n	Total Release []y [x]n
Ground DW []y [X]n	Water Releases [x]y []n 2581 kg/yr
Ambient Air []y [X]n	Consumer []y [X]n

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CASE NUMBER(S): p-99-0044

ENVIRONMENTAL RELEASES

RELEASE ID#: 2a Number of Release Sites: 8
RELEASE ACTIVITY: () MFG () PRO (X) IND USE () COMM USE () CONS USE

RELEASE DESCRIPTION:	WATER	LANDFILL	INCINER	LAND/INCIN	FUGITIVE
Total Releases:	2280.00	0.00	0.00	0.00	0.00
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)
Release Days/yr:	3				0
Per Site Release:	95.00	0.00	0.00	0.00	0.00
	(kg/day)	(kg/yr)	(kg/yr)	(kg/yr)	(kg/day)

REMARKS : Landfill release is less than the trigger amount of 200 kg/site/yr.

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RELEASE ID#: 2b Number of Release Sites: 1
RELEASE ACTIVITY: () MFG () PRO (X) IND USE () COMM USE () CONS USE

RELEASE DESCRIPTION:	WATER	LANDFILL	INCINER	LAND/INCIN	FUGITIVE
Total Releases:	238.50	0.00	0.00	0.00	0.00
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)
Release Days/yr:	68				0
Per Site Release:	3.50	0.00	0.00	0.00	0.00
	(kg/day)	(kg/yr)	(kg/yr)	(kg/yr)	(kg/day)

REMARKS : Landfill release is less than the trigger amount of 200 kg/site/yr.

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CASE NUMBER(S): p-99-0044

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

RELEASE ID#: 1a

RELEASE ACTIVITY: (X)MFG ()PRO ()IND USE ()COMM USE ()CONS USE

Facility Name:

Facility Location:

Receiving Water Name:

Reach Number:

Facility on Reach? [X] Yes [] No

Discharge Type: [X] Direct [] Indirect

NPDES Permit #: (for indirects, use POTW permit #)

Data Source: [] Task 73
[] IFD
[] Submitter
[] Contractor
[] Region/State
[X] Other SIDS

Removal in Wastewater Treatment: 0.000 %

Plant Effluent Flow (MLD): 3.727

Release (kg/site/day): 1.000 (before treatment) 1.000 (after treatment)

Release days/yr: 30

FLOW TYPE	STREAMFLOW (MLD)	STREAM CONC (ug/l)	ESTIMATED PDRs (mg/yr)	
			DRINKING H2O	FISH INGEST*
MEAN	1.04e+05	9.62e-03	5.77e-04	< 0.01
LOW	1.87e+04	5.35e-02		
PLANT	3.73	268.31		

*Where, STREAM CONC. = [(release after treatment) X (1000)] / (streamflow)
DRINKING H2O PDR = (mean stream conc) X (water ingested) X
(release days/yr) / (0.001)
FISH ING PDR = (mean stream conc) X (Bio Concentration Factor) X
(fish ingested/day) X (release days/yr) X (1.0e-6)

REMARKS : COC = 2 ppb. COC is not exceeded.

1 CFS = 2.4465 MLD

1 MGD = 3.7854 MLD

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CASE NUMBER(S): p-99-0044

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

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RELEASE ID#: 1b

RELEASE ACTIVITY: (X)MFG ()PRO ()IND USE ()COMM USE ()CONS USE

Facility Name: 1

Facility Location:

Receiving Water Name:

Reach Number:

Facility on Reach? [X] Yes [] No

Discharge Type: [X] Direct [] Indirect

NPDES Permit #: for indirects, use POTW permit #)

Data Source: [] Task 73
 [] IFD
 [] Submitter
 [] Contractor
 [] Region/State
 [X] Other SIDS

Removal in Wastewater Treatment: 0.000 %

Plant Effluent Flow (MLD): 3.727

Release (kg/site/day): 16.000 16.000
 (before treatment) (after treatment)

Release days/yr: 2

FLOW TYPE	STREAMFLOW (MLD)	STREAM CONC (ug/l)	ESTIMATED PDRs (mg/yr)	
			DRINKING H2O	FISH INGEST*
MEAN	1.04e+05	0.15	6.15e-04	< 0.01
LOW	1.87e+04	0.86		
PLANT	3.73	4293.00		

*Where, STREAM CONC. = [(release after treatment) X (1000)] / (streamflow)
 DRINKING H2O PDR = (mean stream conc) X (water ingested) X
 (release days/yr) / (0.001)
 FISH ING PDR = (mean stream conc) X (Bio Concentration Factor) X
 (fish ingested/day) X (release days/yr) X (1.0e-6)

REMARKS : COC = 2 ppb. COC is not exceeded.

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CASE NUMBER(S): p-99-44

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

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RELEASE ID#: 28

RELEASE ACTIVITY: () MFG () PRO (X) IND USE () COMM USE () CONS USE

RELEASE ACTIVITY SIC CODE(S): 332,336

SIC CODE DESCRIPTION: Foundries

Removal in Wastewater Treatment: 0.000 %

Bio Concentration Factor : 0.000

Release (kg/site/day): 95.000 95.000
(before treatment) (after treatment)

Release days/yr: 3

Water ingested (liters/day) : 2.000

Fish consumed (grams/day) : 0.000

PLANT TYPE	%	STREAMFLOW (MLD)		STREAM CONC (UG/L)		HUMAN PDRs (MG/YR)	
		MEAN	LOW	MEAN	LOW	WATER	FISH *
All	50	1857.79	189.93	51.14	500.18	0.31	0.00
All	10	216.76	8.02	438.27	1.18e+04	2.63	0.00

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*Where, STREAM CONC = [(Release after treatment) X (1000)] / (Streamflow)
DRINKING WATER PDR = (Mean stream conc) X (water ingested/day) X
(Release days/yr) X (0.001)
FISH INGESTION PDR = (Mean stream conc) X (Bio Concentration Factor)
X (fish ingested/day) X (Release days/yr) X (1.0 E-6)

REMARKS: CC = 2 ppb.

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1 CFS = 2.4465 MLD 1 MGD = 3.7854 MLD

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CASE NUMBER(S): p-99-44

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

=====

RELEASE ID#: 2b

RELEASE ACTIVITY: () MFG () PRO (X) IND USE () COMM USE () CONS USE

RELEASE ACTIVITY SIC CODE(S): 332,336

SIC CODE DESCRIPTION: Foundries

Removal in Wastewater Treatment: 0.000 %

Bio Concentration Factor : 0.000

Release (kg/site/day): 3.500 3.500
(before treatment) (after treatment)

Release days/yr: 68

Water ingested (liters/day) : 2.000

Fish consumed (grams/day) : 0.000

PLANT TYPE	% TILE	STREAMFLOW (MLD)		STREAM CONC (UG/L)		HUMAN PDRs (MG/YR)	
		MEAN	LOW	MEAN	LOW	WATER	FISH *
All	50	1857.79	189.93	1.88	18.43	0.26	0.00
All	10	216.76	8.02	16.15	436.41	2.20	0.00

*Where, $\text{STREAM CONC} = [(\text{Release after treatment}) \times (1000)] / (\text{Streamflow})$
 $\text{DRINKING WATER PDR} = (\text{Mean stream conc}) \times (\text{water ingested/day}) \times$
 $(\text{Release days/yr}) \times (0.001)$
 $\text{FISH INGESTION PDR} = (\text{Mean stream conc}) \times (\text{Bio Concentration Factor})$
 $\times (\text{fish ingested/day}) \times (\text{Release days/yr}) \times (1.0 \text{ E-6})$

REMARKS: CC = 2 ppb. Exceeded 67 days.

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1 CFS = 2.4465 MLD

1 MGD = 3.7854 MLD

PDM EXPOSURE REPORT

Page 10 of 11CASE(s) : P-19-44SIC CODE-BASED PROBABILISTIC DILUTION MODEL (PDM) RESULTS
FOR FACILITY IN Foundries (332,336)
High-end Case ScenarioRelease ID# : 2bRelease Activity: () MFG () PRO (y) IND USE () COMM USE () CONS

Release Activity SIC Code (s) : _____

SIC Code Description : _____

Number of Release Sites : _____

Removal in Wastewater Treatment (Percent) : _____

DIRECT INDIRECT ALL

10th %tile Mean Streamflow (MLD) : _____

10th %tile Low Streamflow (MLD) : _____

10th %tile Effluent Streamflow (MLD) : _____

RELEASE DAYS/YR	AMOUNT RELEASED (kg/site/day)	CONCERN CONC. (ug/l)	PERCENT OF YEAR EXCEEDED*	DAYS PER YEAR EXCEEDED
68	3.50	2.00000	18.39	67.13

* 'PERCENT OF YEAR EXCEEDED' is obtained by dividing the 'DAYS PER YEAR EXCEEDED' by 365 days/yr.

Remarks:

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CASE NUMBER(S): p-99-44

NOTE

9 Nov 98

RE: P99-0044
TO: Thomas Brennan, EAB
FROM: Robert S. Boethling, EAB

This substance meets exposure-based criteria for total and water release, and has considerable exceedance of the COC (moderate ecotox concern). Removal was estimated to be 50-90 %. Any removal is likely to be due to sorption, but the extent is uncertain. To resolve this uncertainty it is recommended that the substance be tested in an Activated Sludge Sorption Isotherm test (835.1110).

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